

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-33 (Canceled).

34 (New): A high-voltage discharge lamp lighting apparatus comprising:

lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a voltage of the start pulse;

cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a magnetic core and a secondary coil which constitute said high-voltage pulse generating transformer of said ignitor circuit; and

socket means to which said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and a primary coil of said high-voltage pulse generating transformer, which is a component not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means causes said high-voltage pulse generating transformer to function,

said socket means has a fitting and attaching portion which is made of a cylindrical

member, and two connecting pieces connected to two output terminals of said stabilizer and disposed apart from each other in the axial direction on the inner circumferential surface of the cylindrical member, and

said cap means has a fitting and attaching portion which is formed of a cylindrical member capable of being fitted to the inner circumference of the cylindrical member of said socket means, and first and second contacts being capable of contacting with the two connecting pieces of said socket means and disposed in ring shapes apart from each other in the axial direction on the outer circumferential surface of the cylindrical member of said cap means, the first contact being connected to one electrode of said high-voltage discharge lamp, the second contact being connected to a terminal end extended from the other electrode of said high-voltage discharge lamp via the secondary coil of said high-voltage pulse generating transformer.

35 (New): A high-voltage discharge lamp lighting apparatus comprising:

lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a voltage of the start pulse;

cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a secondary coil which constitutes said high-voltage pulse generating transformer of said ignitor circuit; and

socket means to which said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and a primary coil

and a magnetic core of said high-voltage pulse generating transformer, which are components not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means causes said high-voltage pulse generating transformer to function,

said socket means has a fitting and attaching portion which is made of a cylindrical member, and two connecting pieces connected to two output terminals of said stabilizer and disposed apart from each other in the axial direction on the inner circumferential surface of the cylindrical member, and

said cap means has a fitting and attaching portion which is formed of a cylindrical member capable of being fitted to the inner circumference of the cylindrical member of said socket means, and first and second contacts being capable of contacting with the two connecting pieces of said socket means and disposed in ring shapes apart from each other in the axial direction on the outer circumferential surface of the cylindrical member of said cap means, the first contact being connected to one electrode of said high-voltage discharge lamp, the second contact being connected to a terminal end extended from the other electrode of said high-voltage discharge lamp via the secondary coil of said high-voltage pulse generating transformer.

36 (New): A high-voltage discharge lamp lighting apparatus comprising:

lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a voltage of the start pulse;

cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a part of a primary coil which constitutes said high-voltage pulse generating transformer of said ignitor circuit; and

socket means to which said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and the other part of the primary coil, a magnetic core and a secondary coil of said high-voltage pulse generating transformer, which are components not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means makes the primary coil of said high-voltage pulse generating transformer completely formed and causes said high-voltage pulse generating transformer to function,

said socket means has a fitting and attaching portion which is made of a cylindrical member, two connecting pieces connected respectively to one output terminal of said stabilizer and a terminal end of the primary coil of said high-voltage pulse generating transformer and disposed apart from each other in the axial direction on the inner circumferential surface of the cylindrical member, and a high-voltage side connecting piece disposed on the inner bottom surface of the cylindrical member of said socket means and connected to a terminal end extended from the other output terminal of said stabilizer via the secondary coil of said high-voltage pulse generating transformer, and

said cap means has a fitting and attaching portion which is formed of a cylindrical member capable of being fitted to the inner circumference of the cylindrical member of said socket means, a first contact being capable of contacting with the two connecting pieces of said socket means and disposed in a ring shape on the outer circumferential surface of the cylindrical member of said cap means, and a high-voltage side contact being capable of contacting with the high-voltage side connecting piece of said socket means and disposed in a projected shape on the outer bottom surface of the cylindrical member of said cap means, the

first contact and the high-voltage side contact being connected respectively to opposite electrodes of said high-voltage discharge lamp.

37 (New): A high-voltage discharge lamp lighting apparatus comprising:

lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a voltage of the start pulse;

cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a magnetic core which constitutes said high-voltage pulse generating transformer of said ignitor circuit; and

socket means to which said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and a primary coil and a secondary coil of said high-voltage pulse generating transformer, which are components not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means causes said high-voltage pulse generating transformer to function,

said socket means has a fitting and attaching portion which is made of a cylindrical member, a first connecting piece disposed on the inner circumferential surface of the cylindrical member and connected to one output terminal of said stabilizer, and a high-voltage side connecting piece disposed on the inner bottom surface of the cylindrical member of said socket means and connected to a terminal end extended from the other output terminal of said stabilizer via the secondary coil of said high-voltage pulse generating transformer, and

said cap means has a fitting and attaching portion which is formed of a cylindrical member capable of being fitted to the inner circumference of the cylindrical member of said socket means, a first contact being capable of contacting with said first connecting piece of said socket means and disposed in a ring shape on the outer circumferential surface of the cylindrical member of said cap means, and a high-voltage side contact being capable of contacting with the high-voltage side connecting piece of said socket means and disposed in a projected shape on the outer bottom surface of the cylindrical member of said cap means, the first contact and the high-voltage side contact being connected respectively to opposite electrodes of said high-voltage discharge lamp.

38 (New): A high-voltage discharge lamp lighting apparatus comprising:

lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a voltage of the start pulse;

cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a part of a primary coil which constitutes said high-voltage pulse generating transformer of said ignitor circuit; and

socket means to which said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and the other part of the primary coil, a magnetic core and a secondary coil of said high-voltage pulse generating transformer, which are components not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means

makes the primary coil of said high-voltage pulse generating transformer completely formed and causes said high-voltage pulse generating transformer to function, and

said high-voltage pulse generating transformer comprises:

the magnetic core comprising a first magnetic core member having a pair of leg portions and a U-shaped cross-section, and a second magnetic core member being in a linear shape and having one end in contact with one leg portion of said first magnetic core member and the other end opposed to the other leg portion of said first magnetic core member with a gap formed therebetween;

the secondary coil wound over said second magnetic core member;

the primary coil wound over said second magnetic core member in concentric and radially outwardly spaced relation to said secondary coil; and

a molding member for insulation covering which encloses said primary coil, said secondary coil, and said second magnetic core member except for one end face of said second magnetic core member, and which fills the gap formed between said first magnetic core member and said second magnetic core member.

39 (New): A high-voltage discharge lamp lighting apparatus comprising:

lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a voltage of the start pulse;

cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a part of a primary coil which constitutes said high-voltage pulse generating

transformer of said ignitor circuit; and

socket means to which said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and the other part of the primary coil, a magnetic core and a secondary coil of said high-voltage pulse generating transformer, which are components not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means makes the primary coil of said high-voltage pulse generating transformer completely formed and causes said high-voltage pulse generating transformer to function,

said socket means has a fitting and attaching portion which is made of a cylindrical member, two connecting pieces connected respectively to one output terminal of said stabilizer and a terminal end of the primary coil of said high-voltage pulse generating transformer and disposed apart from each other in the axial direction on the inner circumferential surface of the cylindrical member, and a high-voltage side connecting piece disposed on the inner bottom surface of the cylindrical member of said socket means and connected to a terminal end extended from the other output terminal of said stabilizer via the secondary coil of said high-voltage pulse generating transformer,

said cap means has a fitting and attaching portion which is formed of a cylindrical member capable of being fitted to the inner circumference of the cylindrical member of said socket means, a first contact being capable of contacting with the two connecting pieces of said socket means and disposed in a ring shape on the outer circumferential surface of the cylindrical member of said cap means, and a high-voltage side contact being capable of contacting with the high-voltage side connecting piece of said socket means and disposed in a projected shape on the outer bottom surface of the cylindrical member of said cap means, the first contact and the high-voltage side contact being connected respectively to opposite electrodes of said high-voltage discharge lamp, and

said high-voltage pulse generating transformer comprises:

the magnetic core comprising a first magnetic core member having a pair of leg portions and a U-shaped cross-section, and a second magnetic core member being in a linear shape and having one end in contact with one leg portion of said first magnetic core member and the other end opposed to the other leg portion of said first magnetic core member with a gap formed therebetween;

the secondary coil wound over said second magnetic core member;

the primary coil wound over said second magnetic core member in concentric and radially outwardly spaced relation to said secondary coil; and

a molding member for insulation covering which encloses said primary coil, said secondary coil, and said second magnetic core member except for one end face of said second magnetic core member, and which fills the gap formed between said first magnetic core member and said second magnetic core member.

40 (New): A high-voltage discharge lamp apparatus comprising: a high-voltage discharge lamp; and

a high-voltage discharge lamp lighting apparatus comprising lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a voltage of the start pulse; cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a magnetic core and a secondary coil which constitute said high-voltage pulse generating transformer of said ignitor circuit; and socket means to which

said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and a primary coil of said high-voltage pulse generating transformer, which is a component not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means causes said high-voltage pulse generating transformer to function,

said socket means has a fitting and attaching portion which is made of a cylindrical member, and two connecting pieces connected to two output terminals of said stabilizer and disposed apart from each other in the axial direction on the inner circumferential surface of the cylindrical member, and

said cap means has a fitting and attaching portion which is formed of a cylindrical member capable of being fitted to the inner circumference of the cylindrical member of said socket means, and first and second contacts being capable of contacting with the two connecting pieces of said socket means and disposed in ring shapes apart from each other in the axial direction on the outer circumferential surface of the cylindrical member of said cap means, the first contact being connected to one electrode of said high-voltage discharge lamp, the second contact being connected to a terminal end extended from the other electrode of said high-voltage discharge lamp via the secondary coil of said high-voltage pulse generating transformer.

41 (New): A high-voltage discharge lamp apparatus comprising:

a high-voltage discharge lamp; and

a high-voltage discharge lamp lighting apparatus comprising lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating

circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a voltage of the start pulse; cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a secondary coil which constitutes said high-voltage pulse generating transformer of said ignitor circuit; and socket means to which said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and a primary coil and a magnetic core of said high-voltage pulse generating transformer, which are components not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means causes said high-voltage pulse generating transformer to function,

said socket means has a fitting and attaching portion which is made of a cylindrical member, and two connecting pieces connected to two output terminals of said stabilizer and disposed apart from each other in the axial direction on the inner circumferential surface of the cylindrical member, and

said cap means has a fitting and attaching portion which is formed of a cylindrical member capable of being fitted to the inner circumference of the cylindrical member of said socket means, and first and second contacts being capable of contacting with the two connecting pieces of said socket means and disposed in ring shapes apart from each other in the axial direction on the outer circumferential surface of the cylindrical member of said cap means, the first contact being connected to one electrode of said high-voltage discharge lamp, the second contact being connected to a terminal end extended from the other electrode of said high-voltage discharge lamp via the secondary coil of said high-voltage pulse generating transformer.

42 (New): A high-voltage discharge lamp apparatus comprising;

a high-voltage discharge lamp; and

a high-voltage discharge lamp lighting apparatus comprising lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a voltage of the start pulse; cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a part of a primary coil which constitutes said high-voltage pulse generating transformer of said ignitor circuit; and socket means to which said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and the other part of the primary coil, a magnetic core and a secondary coil of said high-voltage pulse generating transformer, which are components not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means makes the primary coil of said high-voltage pulse generating transformer completely formed and causes said high-voltage pulse generating transformer to function,

said socket means has a fitting and attaching portion which is made of a cylindrical member, two connecting pieces connected respectively to one output terminal of said stabilizer and a terminal end of the primary coil of said high-voltage pulse generating transformer and disposed apart from each other in the axial direction on the inner circumferential surface of the cylindrical member, and a high-voltage side connecting piece disposed on the inner bottom surface of the cylindrical member of said socket means and connected to a terminal end extended from the other output terminal of said stabilizer via the secondary coil of said high-voltage pulse generating transformer, and

said cap means has a fitting and attaching portion which is formed of a cylindrical member capable of being fitted to the inner circumference of the cylindrical member of said socket means, a first contact being capable of contacting with the two connecting pieces of said socket means and disposed in a ring shape on the outer circumferential surface of the cylindrical member of said cap means, and a high-voltage side contact being capable of contacting with the high-voltage side connecting piece of said socket means and disposed in a projected shape on the outer bottom surface of the cylindrical member of said cap means, the first contact and the high-voltage side contact being connected respectively to opposite electrodes of said high-voltage discharge lamp.

43 (New): A high-voltage discharge lamp apparatus comprising:

a high-voltage discharge lamp; and

a high-voltage discharge lamp lighting apparatus comprising lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a voltage of the start pulse; cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a magnetic core which constitutes said high-voltage pulse generating transformer of said ignitor circuit; and socket means to which said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and a primary coil and a secondary coil of said high-voltage pulse generating transformer, which are components not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means

causes said high-voltage pulse generating transformer to function,

said socket means has a fitting and attaching portion which is made of a cylindrical member, a first connecting piece disposed on the inner circumferential surface of the cylindrical member and connected to one output terminal of said stabilizer, and a high-voltage side connecting piece disposed on the inner bottom surface of the cylindrical member of said socket means and connected to a terminal end extended from the other output terminal of said stabilizer via the secondary coil of said high-voltage pulse generating transformer, and

said cap means has a fitting and attaching portion which is formed of a cylindrical member capable of being fitted to the inner circumference of the cylindrical member of said socket means, a first contact being capable of contacting with said first connecting piece of said socket means and disposed in a ring shape on the outer circumferential surface of the cylindrical member of said cap means, and a high-voltage side contact being capable of contacting with the high-voltage side connecting piece of said socket means and disposed in a projected shape on the outer bottom surface of the cylindrical member of said cap means, the first contact and the high-voltage side contact being connected respectively to opposite electrodes of said high-voltage discharge lamp.

44 (New): A high-voltage discharge lamp apparatus comprising:

a high-voltage discharge lamp; and

a high-voltage discharge lamp lighting apparatus comprising lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a

voltage of the start pulse; cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a part of a primary coil which constitutes said high-voltage pulse generating transformer of said ignitor circuit; and socket means to which said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and the other part of the primary coil, a magnetic core and a secondary coil of said high-voltage pulse generating transformer, which are components not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means makes the primary coil of said high-voltage pulse generating transformer completely formed and causes said high-voltage pulse generating transformer to function, and

said high-voltage pulse generating transformer comprises:

the magnetic core comprising a first magnetic core member having a pair of leg portions and a U-shaped cross-section, and a second magnetic core member being in a linear shape and having one end in contact with one leg portion of said first magnetic core member and the other end opposed to the other leg portion of said first magnetic core member with a gap formed therebetween;

the secondary coil wound over said second magnetic core member;

the primary coil wound over said second magnetic core member in concentric and radially outwardly spaced relation to said secondary coil; and

a molding member for insulation covering which encloses said primary coil, said secondary coil, and said second magnetic core member except for one end face of said second magnetic core member, and which fills the gap formed between said first magnetic core member and said second magnetic core member.

45 (New): A high-voltage discharge lamp apparatus comprising:

a high-voltage discharge lamp; and

a high-voltage discharge lamp lighting apparatus comprising lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a voltage of the start pulse; cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a part of a primary coil which constitutes said high-voltage pulse generating transformer of said ignitor circuit; and socket means to which said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and the other part of the primary coil, a magnetic core and a secondary coil of said high-voltage pulse generating transformer, which are components not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means makes the primary coil of said high-voltage pulse generating transformer completely formed and causes said high-voltage pulse generating transformer to function,

said socket means has a fitting and attaching portion which is made of a cylindrical member, two connecting pieces connected respectively to one output terminal of said stabilizer and a terminal end of the primary coil of said high-voltage pulse generating transformer and disposed apart from each other in the axial direction on the inner circumferential surface of the cylindrical member, and a high-voltage side connecting piece disposed on the inner bottom surface of the cylindrical member of said socket means and connected to a terminal end extended from the other output terminal of said stabilizer via the secondary coil of said high-voltage pulse generating transformer,

said cap means has a fitting and attaching portion which is formed of a cylindrical member capable of being fitted to the inner circumference of the cylindrical member of said socket means, a first contact being capable of contacting with the two connecting pieces of said socket means and disposed in a ring shape on the outer circumferential surface of the cylindrical member of said cap means, and a high-voltage side contact being capable of contacting with the high-voltage side connecting piece of said socket means and disposed in a projected shape on the outer bottom surface of the cylindrical member of said cap means, the first contact and the high-voltage side contact being connected respectively to opposite electrodes of said high-voltage discharge lamp, and

said high-voltage pulse generating transformer comprises:

the magnetic core comprising a first magnetic core member having a pair of leg portions and a U-shaped cross-section, and a second magnetic core member being in a linear shape and having one end in contact with one leg portion of said first magnetic core member and the other end opposed to the other leg portion of said first magnetic core member with a gap formed therebetween;

the secondary coil wound over said second magnetic core member;

the primary coil wound over said second magnetic core member in concentric and radially outwardly spaced relation to said secondary coil; and

a molding member for insulation covering which encloses said primary coil, said secondary coil, and said second magnetic core member except for one end face of said second magnetic core member, and which fills the gap formed between said first magnetic core member and said second magnetic core member.

46 (New): A floodlight projector apparatus comprising:

a high-voltage discharge lamp; and

a high-voltage discharge lamp lighting apparatus comprising lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a voltage of the start pulse; cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a magnetic core and a secondary coil which constitute said high-voltage pulse generating transformer of said ignitor circuit; and socket means to which said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and a primary coil of said high-voltage pulse generating transformer, which is a component not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means causes said high-voltage pulse generating transformer to function,

said socket means has a fitting and attaching portion which is made of a cylindrical member, and two connecting pieces connected to two output terminals of said stabilizer and disposed apart from each other in the axial direction on the inner circumferential surface of the cylindrical member, and

said cap means has a fitting and attaching portion which is formed of a cylindrical member capable of being fitted to the inner circumference of the cylindrical member of said socket means, and first and second contacts being capable of contacting with the two connecting pieces of said socket means and disposed in ring shapes apart from each other in the axial direction on the outer circumferential surface of the cylindrical member of said cap means, the first contact being connected to one electrode of said high-voltage discharge lamp, the second contact being connected to a terminal end extended from the other electrode of said

high-voltage discharge lamp via the secondary coil of said high-voltage pulse generating transformer.

47 (New): A floodlight projector apparatus comprising:
a high-voltage discharge lamp; and
a high-voltage discharge lamp lighting apparatus comprising lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a voltage of the start pulse; cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a secondary coil which constitutes said high-voltage pulse generating transformer of said ignitor circuit; and socket means to which said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and a primary coil and a magnetic core of said high-voltage pulse generating transformer, which are components not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means causes said high-voltage pulse generating transformer to function,

said socket means has a fitting and attaching portion which is made of a cylindrical member, and two connecting pieces connected to two output terminals of said stabilizer and disposed apart from each other in the axial direction on the inner circumferential surface of the cylindrical member, and

said cap means has a fitting and attaching portion which is formed of a cylindrical member capable of being fitted to the inner circumference of the cylindrical member of said

socket means, and first and second contacts being capable of contacting with the two connecting pieces of said socket means and disposed in ring shapes apart from each other in the axial direction on the outer circumferential surface of the cylindrical member of said cap means, the first contact being connected to one electrode of said high-voltage discharge lamp, the second contact being connected to a terminal end extended from the other electrode of said high-voltage discharge lamp via the secondary coil of said high-voltage pulse generating transformer.

48 (New): A floodlight projector apparatus comprising:

a high-voltage discharge lamp; and

a high-voltage discharge lamp lighting apparatus comprising lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a voltage of the start pulse; cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a part of a primary coil which constitutes said high-voltage pulse generating transformer of said ignitor circuit; and socket means to which said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and the other part of the primary coil, a magnetic core and a secondary coil of said high-voltage pulse generating transformer, which are components not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means makes the primary coil of said high-voltage pulse generating transformer completely formed

and causes said high-voltage pulse generating transformer to function,

said socket means has a fitting and attaching portion which is made of a cylindrical member, two connecting pieces connected respectively to one output terminal of said stabilizer and a terminal end of the primary coil of said high-voltage pulse generating transformer and disposed apart from each other in the axial direction on the inner circumferential surface of the cylindrical member, and a high-voltage side connecting piece disposed on the inner bottom surface of the cylindrical member of said socket means and connected to a terminal end extended from the other output terminal of said stabilizer via the secondary coil of said high-voltage pulse generating transformer, and

said cap means has a fitting and attaching portion which is formed of a cylindrical member capable of being fitted to the inner circumference of the cylindrical member of said socket means, a first contact being capable of contacting with the two connecting pieces of said socket means and disposed in a ring shape on the outer circumferential surface of the cylindrical member of said cap means, and a high-voltage side contact being capable of contacting with the high-voltage side connecting piece of said socket means and disposed in a projected shape on the outer bottom surface of the cylindrical member of said cap means, the first contact and the high-voltage side contact being connected respectively to opposite electrodes of said high-voltage discharge lamp.

49 (New): A floodlight projector apparatus comprising:

a high-voltage discharge lamp; and

a high-voltage discharge lamp lighting apparatus comprising lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating

circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a voltage of the start pulse; cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a magnetic core which constitutes said high-voltage pulse generating transformer of said ignitor circuit; and socket means to which said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and a primary coil and a secondary coil of said high-voltage pulse generating transformer, which are components not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means causes said high-voltage pulse generating transformer to function,

said socket means has a fitting and attaching portion which is made of a cylindrical member, a first connecting piece disposed on the inner circumferential surface of the cylindrical member and connected to one output terminal of said stabilizer, and a high-voltage side connecting piece disposed on the inner bottom surface of the cylindrical member of said socket means and connected to a terminal end extended from the other output terminal of said stabilizer via the secondary coil of said high-voltage pulse generating transformer, and

said cap means has a fitting and attaching portion which is formed of a cylindrical member capable of being fitted to the inner circumference of the cylindrical member of said socket means, a first contact being capable of contacting with said first connecting piece of said socket means and disposed in a ring shape on the outer circumferential surface of the cylindrical member of said cap means, and a high-voltage side contact being capable of contacting with the high-voltage side connecting piece of said socket means and disposed in a projected shape on the outer bottom surface of the cylindrical member of said cap means, the first contact and the high-voltage side contact being connected respectively to opposite electrodes of said high-voltage discharge lamp.

50 (New): A floodlight projector apparatus comprising:

a high-voltage discharge lamp; and

a high-voltage discharge lamp lighting apparatus comprising lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a voltage of the start pulse; cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a part of a primary coil which constitutes said high-voltage pulse generating transformer of said ignitor circuit; and socket means to which said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and the other part of the primary coil, a magnetic core and a secondary coil of said high-voltage pulse generating transformer, which are components not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means makes the primary coil of said high-voltage pulse generating transformer completely formed and causes said high-voltage pulse generating transformer to function, and

said high-voltage pulse generating transformer comprises:

the magnetic core comprising a first magnetic core member having a pair of leg portions and a U-shaped cross-section, and a second magnetic core member being in a linear shape and having one end in contact with one leg portion of said first magnetic core member and the other end opposed to the other leg portion of said first magnetic core member with a gap formed therebetween;

the secondary coil wound over said second magnetic core member;

the primary coil wound over said second magnetic core member in concentric and radially outwardly spaced relation to said secondary coil; and

a molding member for insulation covering which encloses said primary coil, said secondary coil, and said second magnetic core member except for one end face of said second magnetic core member, and which fills the gap formed between said first magnetic core member and said second magnetic core member.

51 (New): A floodlight projector apparatus comprising:

a high-voltage discharge lamp; and

a high-voltage discharge lamp lighting apparatus comprising lighting means comprising a stabilizer and an ignitor circuit comprising an oscillating circuit-for-driving and a high-voltage pulse generating transformer, said stabilizer supplying a power voltage for maintaining the lighting operation to a high-voltage discharge lamp, said oscillating circuit-for-driving generating a start pulse at the time of starting the lighting operation of said high-voltage discharge lamp, said high-voltage pulse generating transformer increasing a voltage of the start pulse; cap means which mounts and holds said high-voltage discharge lamp thereon, said cap means including a part of a primary coil which constitutes said high-voltage pulse generating transformer of said ignitor circuit; and socket means to which said cap means is fitted and attached, said socket means including at least said oscillating circuit-for-driving of said ignitor circuit and the other part of the primary coil, a magnetic core and a secondary coil of said high-voltage pulse generating transformer, which are components not included in said cap means,

wherein the operation for fitting and attaching said cap means to said socket means makes the primary coil of said high-voltage pulse generating transformer completely formed and causes said high-voltage pulse generating transformer to function,

said socket means has a fitting and attaching portion which is made of a cylindrical member, two connecting pieces connected respectively to one output terminal of said stabilizer and a terminal end of the primary coil of said high-voltage pulse generating transformer and disposed apart from each other in the axial direction on the inner circumferential surface of the cylindrical member, and a high-voltage side connecting piece disposed on the inner bottom surface of the cylindrical member of said socket means and connected to a terminal end extended from the other output terminal of said stabilizer via the secondary coil of said high-voltage pulse generating transformer,

said cap means has a fitting and attaching portion which is formed of a cylindrical member capable of being fitted to the inner circumference of the cylindrical member of said socket means, a first contact being capable of contacting with the two connecting pieces of said socket means and disposed in a ring shape on the outer circumferential surface of the cylindrical member of said cap means, and a high-voltage side contact being capable of contacting with the high-voltage side connecting piece of said socket means and disposed in a projected shape on the outer bottom surface of the cylindrical member of said cap means, the first contact and the high-voltage side contact being connected respectively to opposite electrodes of said high-voltage discharge lamp, and

said high-voltage pulse generating transformer comprises:

the magnetic core comprising a first magnetic core member having a pair of leg portions and a U-shaped cross-section, and a second magnetic core member being in a linear shape and having one end in contact with one leg portion of said first magnetic core member and the other end opposed to the other leg portion of said first magnetic core member with a gap formed therebetween:

the secondary coil wound over said second magnetic core member;

the primary coil wound over said second magnetic core member in concentric and

radially outwardly spaced relation to said secondary coil; and

a molding member for insulation cornering which encloses said primary coil, said secondary coil, and said second magnetic core member except for one end face of said second magnetic core member, and which fills the gap formed between said first magnetic core member and said second magnetic core member.